

Project A: Robot Arm and Spinning Tops

(ahm693)

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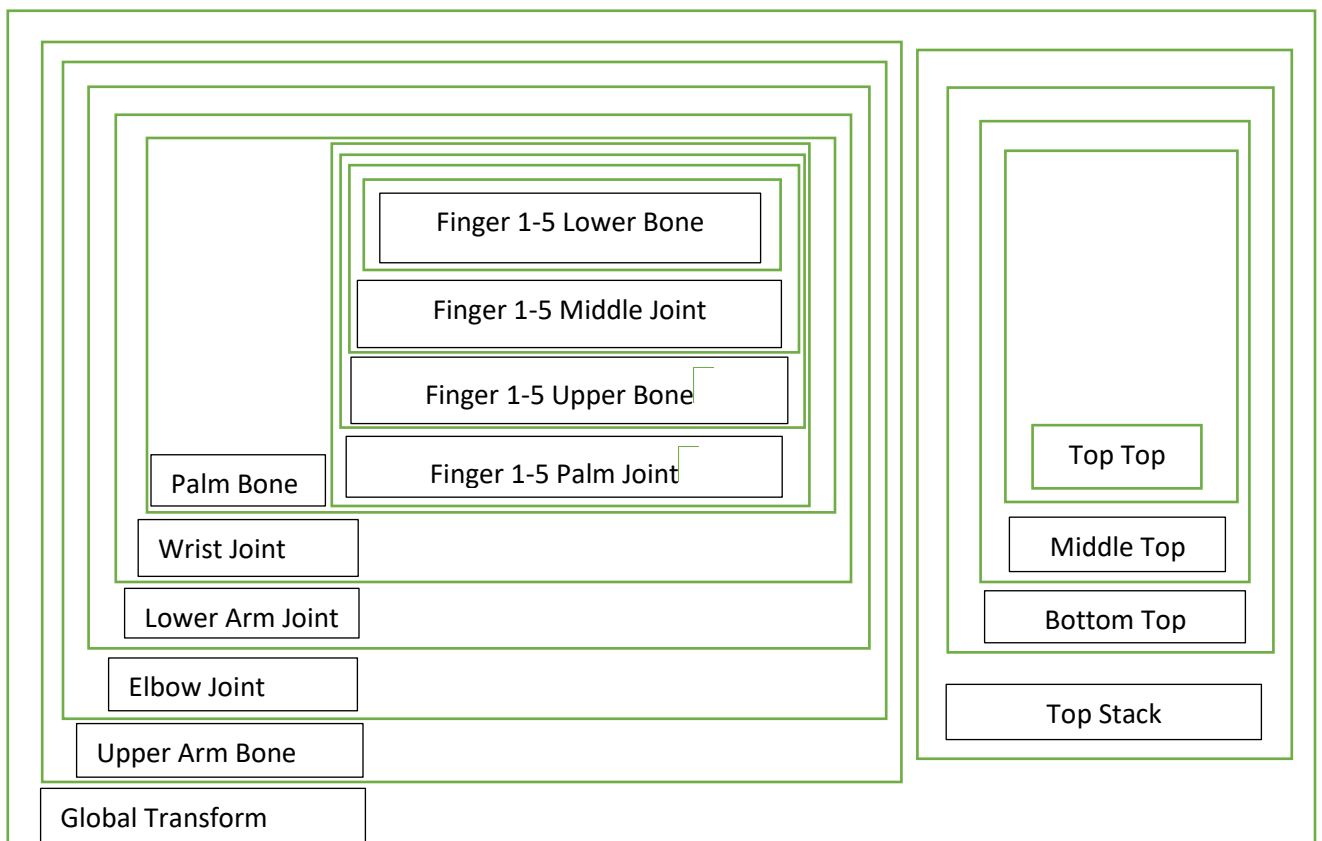
Goals:

- Make a fully animated arm 3D arm with 5 fully jointed fingers
- Produce multiple simple animations
- Transition between animations seamlessly
- Implement different control methods for the user to interact with
- Create complex 3D parts (a cylinder and a top)

User's guide:

- To lengthen the robot arm, click here the top left of the canvas. To shorten it, click the bottom right. To return the arm to its original length, click the middle of the screen.
- Drag with your mouse to rotate the scene.
- Press up/down arrow keys to raise and lower the arm.
- Press left/right arrow keys to spin up or down the tops, and R to reset.
- To launch any animation, click one of the buttons on the bottom of the page.
- To pause press P or click the PAUSE button.
- To launch “debug” mode and see all transforms in the scene, press D.

SceneGraph:



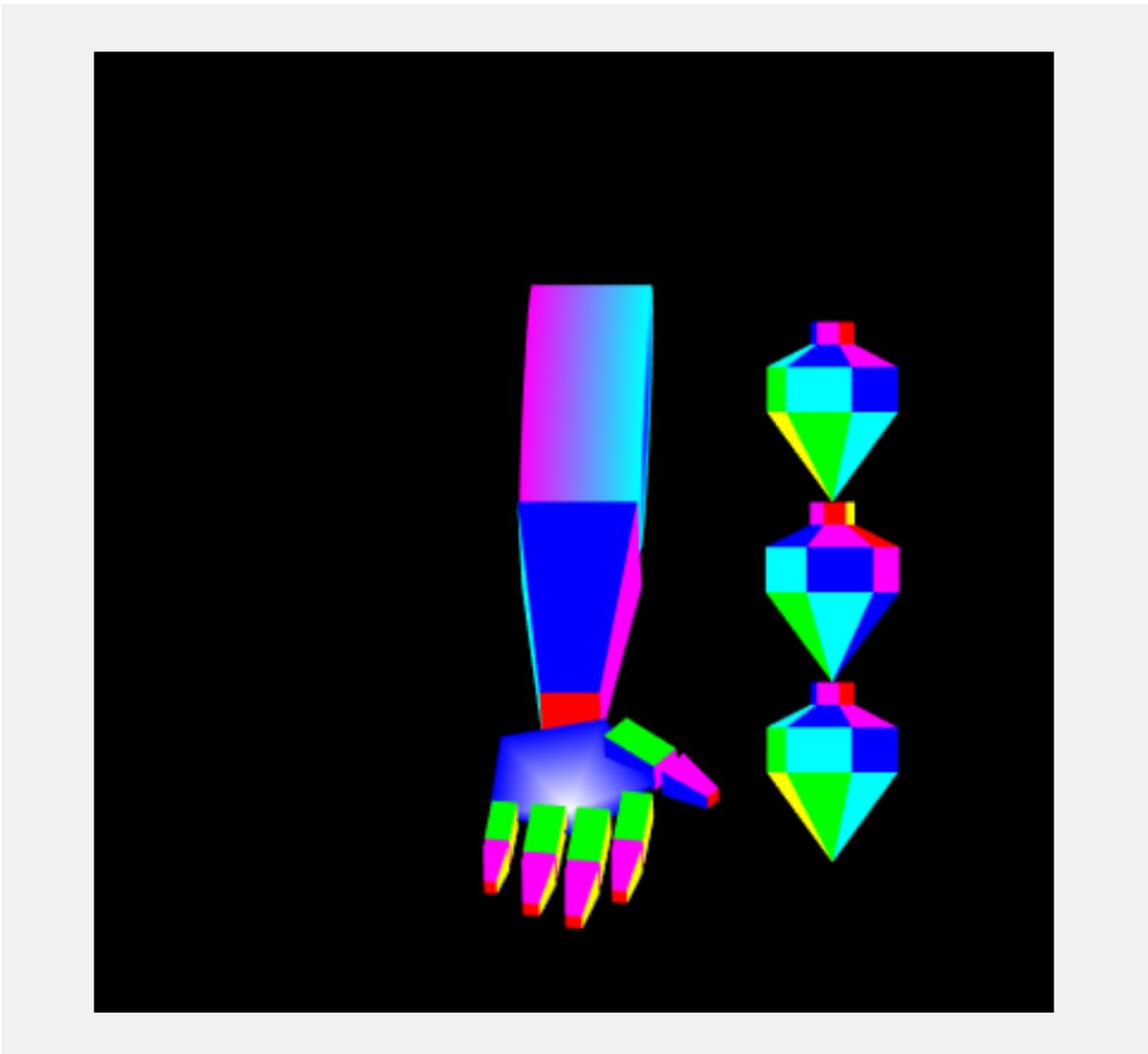


Figure 1: The arm is unanimated in the lowered position

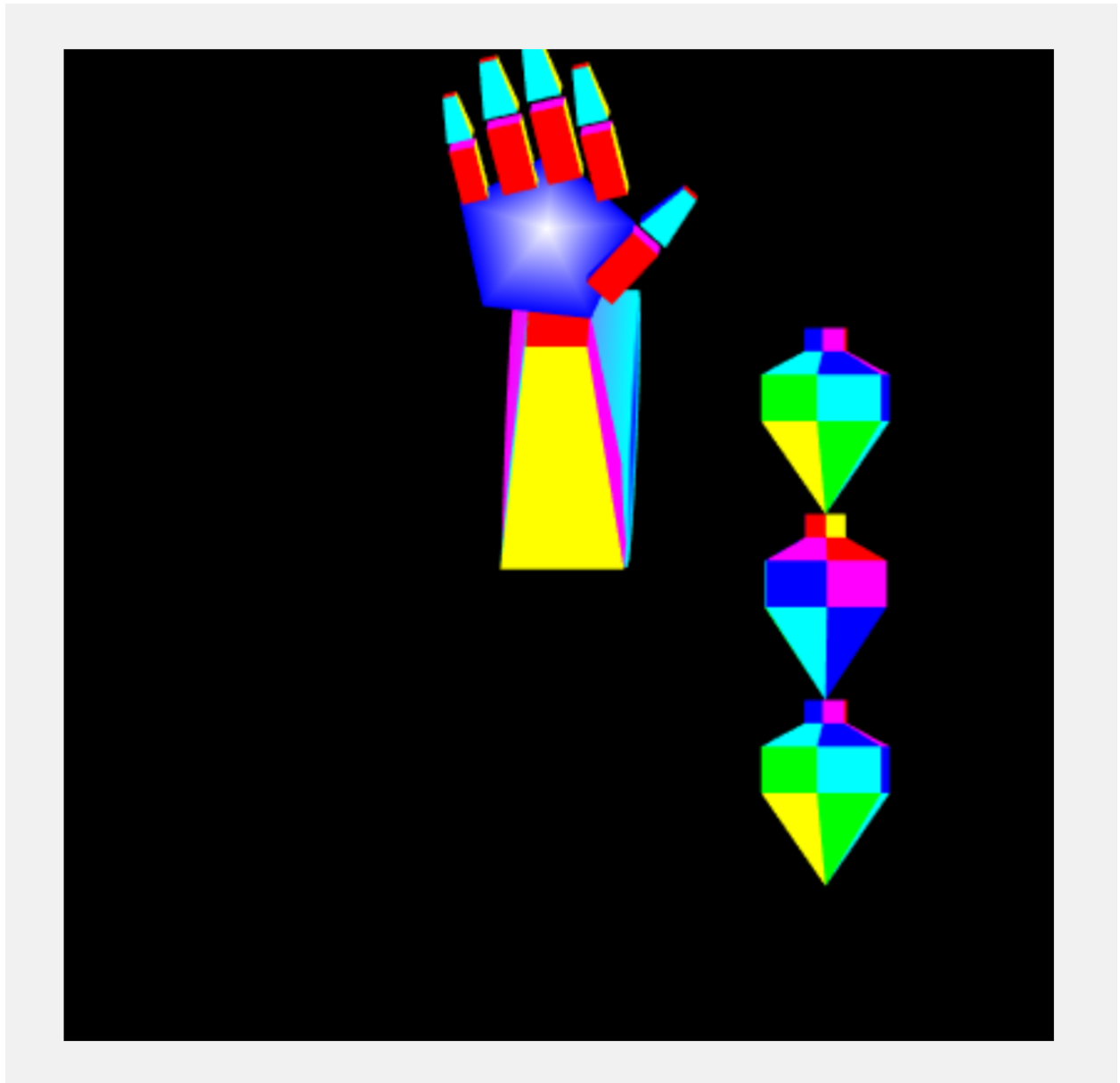


Figure 2: Waving animation, arm at normal length

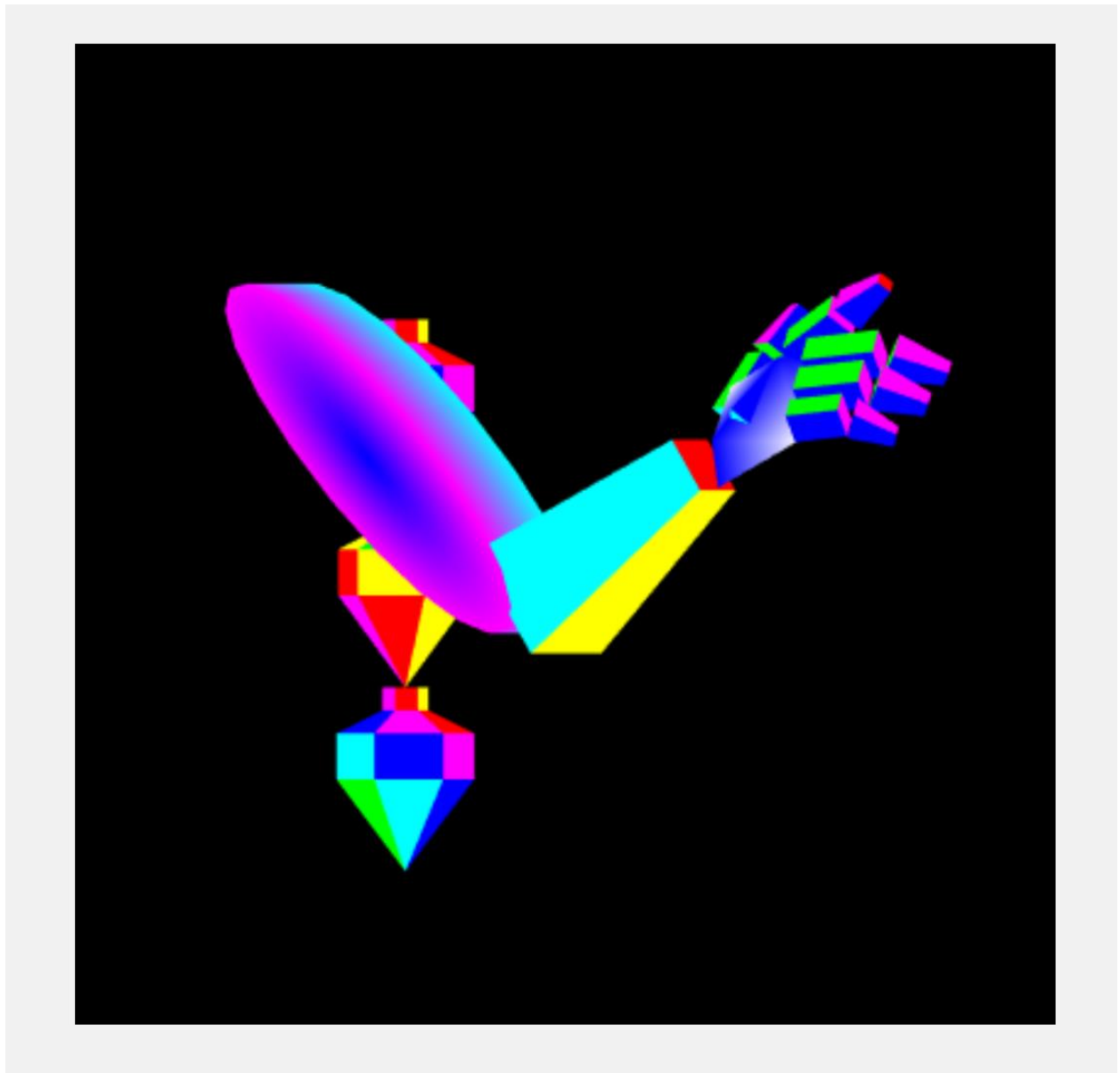


Figure 3: Animation transition between “Wave” and “FingerGun”, arm lengthened

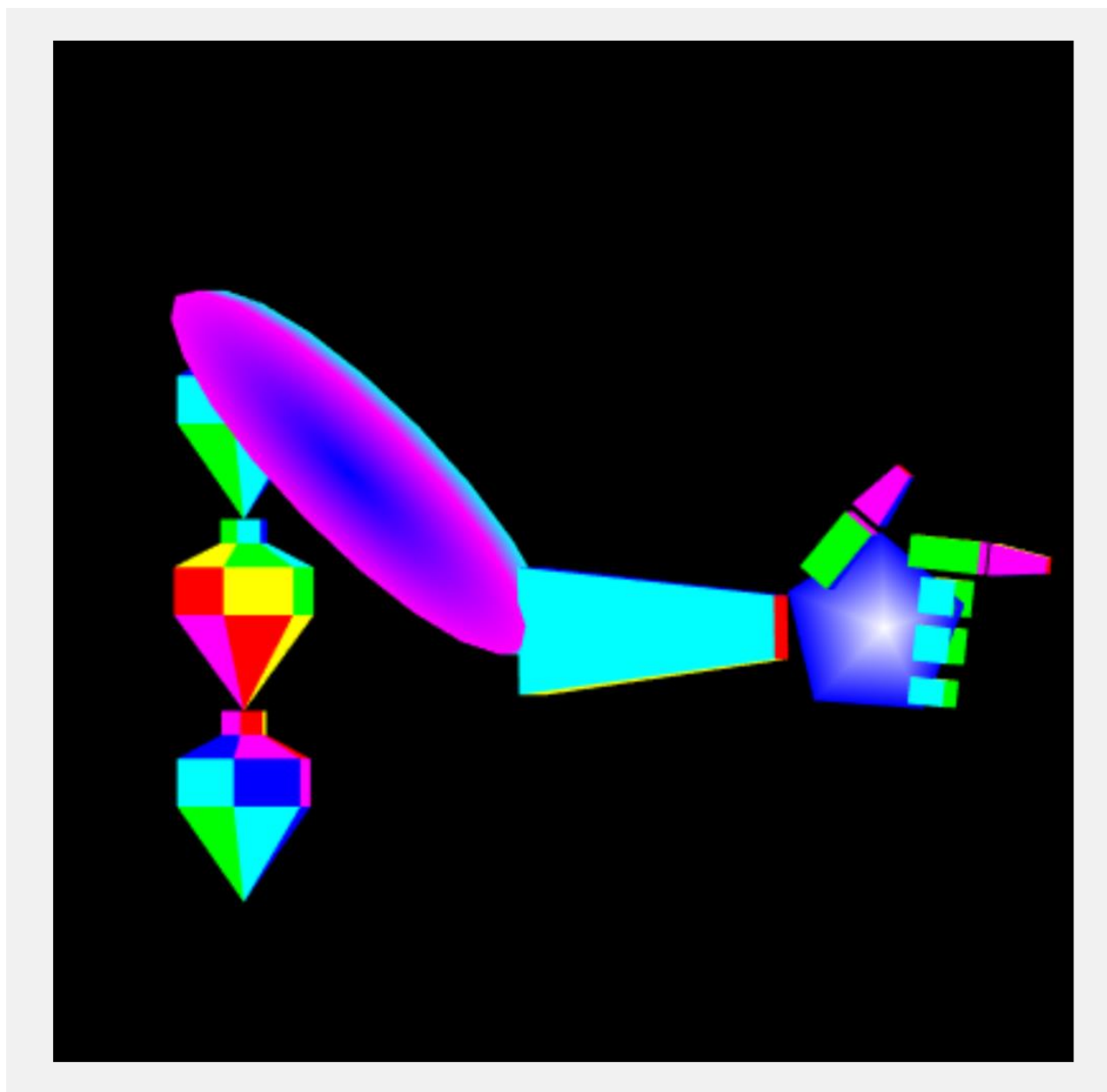


Figure 4: “FingerGun” pose, arm lengthened

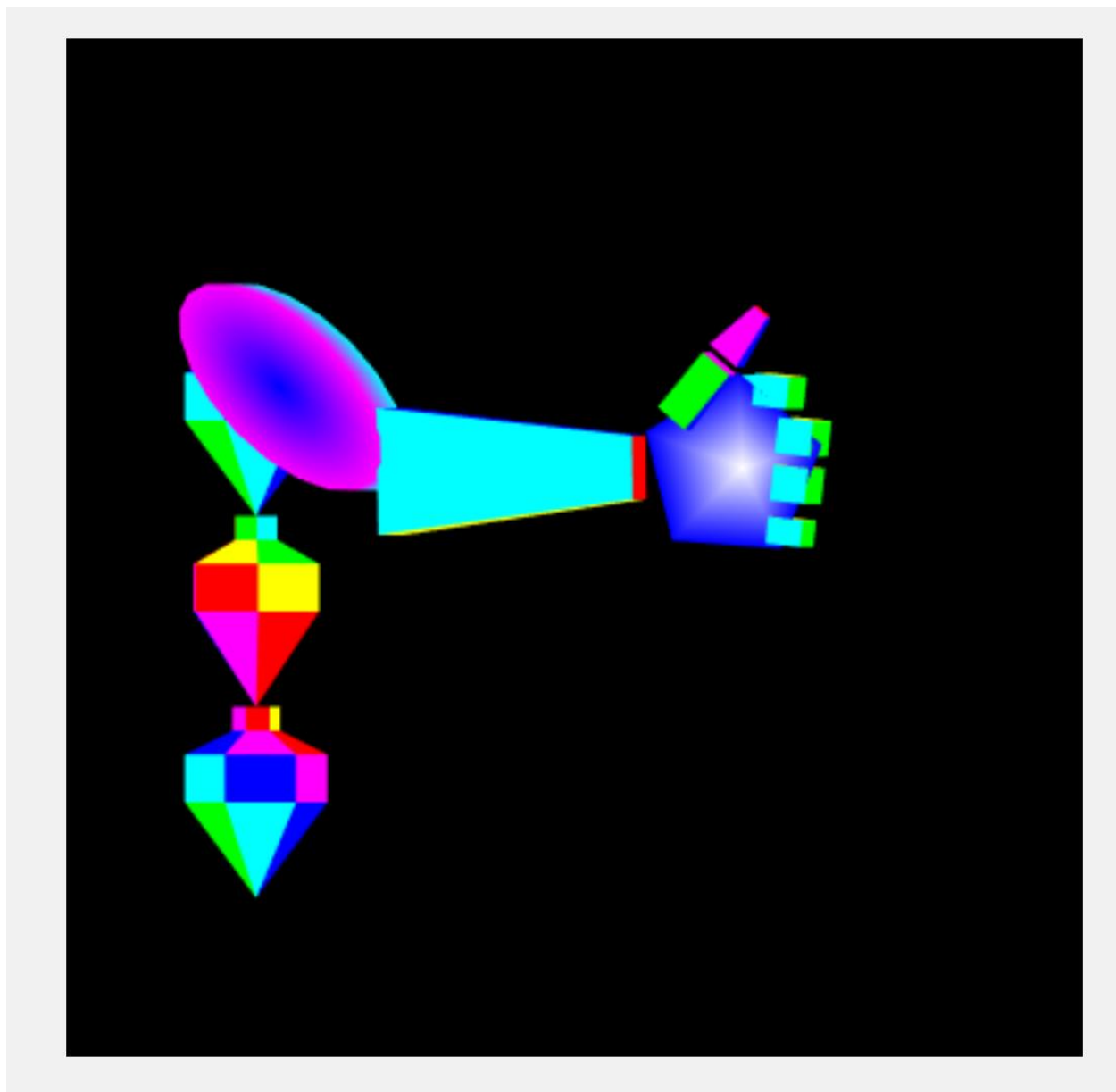


Figure 5: “Thumbs Up” pose, arm shortened